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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,859	09/22/2003	Konrad Basler	Q-77377	4459
7590	11/23/2005		EXAMINER	
SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, NW Washington, DC 20037-3213				CARLSON, KAREN C
		ART UNIT	PAPER NUMBER	1653

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/664,859	<b>Applicant(s)</b> BASLER ET AL.
	<b>Examiner</b> Karen Cochrane Carlson, Ph.D.	<b>Art Unit</b> 1653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 61-66 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 61-66 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/22/03

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: 3 SEO attachments

Claims 1-60 have been cancelled. New Claims 61-66 are currently pending and are under examination.

Priority is set to July 28, 2000.

**Sequence Compliance:**

There is no amino acid sequence identifier depicting the amino acid sequence depicted in Figure 2, or under the nucleotide sequence of SEQ ID NO: 1. Thus, the Sequence Rules have not been met.

Further, upon finding the art of Venter et al. (US PG Pub 2005/0208558), the search of polypeptides encoded by the nucleotide sequence of SEQ ID NO: 1 shows that Venter et al.'s SEQ ID NO: 3129 is identical to residues 6-1429 of this amino acid sequence, herein now to be referred to as SEQ ID NO: X to help prevent confusion of what is instant SEQ ID NO: 1 (a nucleotide sequence) versus what Applicants claim SEQ ID NO: 1 to be (both nucleotide and amino acid sequences). However, perusal of the C-terminal amino acids of SEQ ID NO: X shows that these amino acids correspond to the C-terminal of Venter et al.'s SEQ ID NO: 3129, that is, the string of amino acids N-terminal of residue 1464 is the same as Venter et al.'s string of amino acids N-terminal to residue 1429. Thus, there is a discrepancy of 40 amino acids (5 at the N-terminus of SEQ ID NO: 3129 and 40 somewhere in-between the N- and C-terminal of SEQ ID NO: X).

Venter et al.'s SEQ ID NO: 3129 is 1429 amino acid in length, of which amino acids 6-1429 are identical to the computer readable form of instant SEQ ID NO: X as determined by the Examiner's perusal of the sequence search. However, SEQ ID NO: X is 1464 amino acids long in paper form. Upon perusal of Venter et al.'s SEQ ID NO: 3129 and SEQ ID NO: X of the instant paper copy of the Sequence listing, amino acids 1140-1179 of the paper form of SEQ ID NO: X is

missing in SEQ ID NO: 3129 at amino acid position 1144-1145 of SEQ ID NO: 3129. When the sequence search was reviewed again, the nucleotides encoding these same amino acids (nucleotides 5482-5601 of SEQ ID NO: 1) are missing from the computer readable form of instant SEQ ID NO: 1. Thus, the paper copy and the computer readable form of SEQ ID NO: 1 are not identical.

Thus:

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth above.

**Applicants must comply with the sequence rules in response to this office or their response will be held non-responsive.**

The disclosure is objected to because of the following informalities:

At page 1, para. 2, line 1, "cystein" should be written as --- cysteine ---.

At page 18 and 39, the sequence identifiers are not placed after the sequences.

At page 32, para. 2, line 4, "Cels" should be written as --- cells ---.

At page 10+, the figure legends must refer to "Figure 1(A), Figure 1(B), and so on, for example, because there is no figure "B" or "Figure 1" in the drawings. See also the legends for figures 3, 5, 7, 8, 10, 11, 12, 13, and 15.

Also, reference to the figures throughout the specification must refer to the specifically named figure. That is, at page 22, para. 3, Figure 1 is referred to instead of "Figure 1(A), for example. See also reference to Figure 7 at page 24, para. 2 and page 26, line 4; Figure 8 at page 27, line 8; and Figures 8 and 10 at page 30, para. 1, for example.

It is noted that parent application 09/915,543 has been allowed. Upon issuance of this application the priority information at page 1 of the specification will have to be updated.

Appropriate correction is required.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Hyperlinks can be found at pages 23, 29, and 41. Applicants should delete <http://> to remove the hyperlink.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 61-66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 61 and 62 refer to nucleotide sequence SEQ ID NO: 1 as both the nucleic acid encoding and the amino acid sequence depicting dlgs. Thus, it is not clear what sequence identifies the amino acid sequence. Additionally, Claim 61 refers to amino acids 1-1464 of SEQ ID NO: 1, while the computer readable form of the translation of SEQ ID NO: 1 depicts an amino acid sequence of 1429 amino acids (ie, SEQ ID NO: X).

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make

and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 61-66 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 65 refers to chimeric polypeptides comprising dlgs (variants and fragments) and glutathione-S-transferase, thioredoxin, or an antibody. At page 6, para. 2 of the specification, the specification states that chimeric polypeptide will comprise dlgs (variants and fragments) and an epitope sequence tag, glutathione-S-transferase, beta-galactosidase, or alkaline phosphatase. Claim 65 is a new claim and is not part of the original disclosure. Thus, the inclusion of thioredoxin, or an antibody as being part of a chimeric polypeptide with dlgs (variants and fragments) is new matter.

Regarding written description, the specification does not describe variants of SEQ ID NO: X having at least 90% identity to SEQ ID NO: X, or biologically active fragments of SEQ ID NO: X. While the claims state that the fragments of SEQ ID NO: X will bind to an antibody against itself, this is not a biological activity, but rather a circular activity, that is, there is no reason for one of skill in the art to use an antibody to bind a fragment of SEQ ID NO: 1 if that fragment has no known activity.

Regarding the written description for dlgs fragments SEQ ID NO: 2, 4, 6, 8, or 10, SEQ ID NO: 2 has been shown to bind Dll1 (page 37). However, the specification fails to address any activity associated with SEQ ID NO: 4, 6, 8, or 10. Thus, without a correlation of structure to function, these sequences lack written description.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 61, 62, 63, and 66 are rejected under 35 U.S.C. 102(e) as being anticipated by Venter et al. (Pub. No. US 2005/0208558). Venter et al.'s SEQ ID NO: 3129 is the same as SEQ ID NO: 3135 in Venter et al.'s provisional application 60/191,637, filed March 23, 2000.

Venter et al. teach SEQ ID NO: 3129, which encompasses amino acids 6-1429 of SEQ ID NO: X as shown in the sequence search (back translation of the computer readable form of SEQ ID NO: 1). Thus, for the purposes of this rejection in view of the noncompliance of the Sequence Rules as noted above, Venter et al. anticipate SEQ ID NO: X (Claims 61, 62), polypeptides having at least 90% identity to SEQ ID NO: X (Claim 61), and polypeptides comprising fragments of SEQ ID NO: X (Claim 61).

Even if the paper form of SEQ ID NO: X were used, the sequences would share 97.2% sequence identity (1423/1464; Claim 61).

Regarding fragments, SEQ ID N: 2, 4, 6, 8, and 10 can be found at amino acid positions 323-334, 520-554, 711-725, 760-768, and 773-884, respectively, in Venter et al.'s SEQ ID NO: 3129 (Claim 63).

At para. [0016] of Venter et al., these polypeptides are placed in pharmaceutical compositions (Claim 66).

No Claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen Cochrane Carlson, Ph.D. whose telephone number is 571-272-0946. The examiner can normally be reached on 7:00 AM - 4:00 PM, off alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

\*\*\*



KAREN COCHRANE CARLSON, PH.D  
PRIMARY EXAMINER

10/669 859 Attach #1

SEQUENCE LISTING

Marked up  
Seq ID NO: 1  
"MO: X"

<110> BASLER, Konrad  
BRUNNER, Erich  
FROESCH, Barbara  
KRAMPS, Thomas  
PETER, Oliver

<120> ESSENTIAL DOWNSTREAM COMPONENT OF THE WINGLESS SIGNALING PATHWAY AND THERAPEUTIC AND DIAGNOSTIC APPLICATIONS BASED THEREON

<130> Q60361

<140> 09/915,543  
<141> 2001-07-27

<150> 60/221,502  
<151> 2000-07-28

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GenCore version 5.1.6  
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(without alignments)  
6590.438 Million cell updates/sec

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Del0	6.0	Delext	7.0

Searched: 1865214 seqs, 418043040 residues

Total number of hits satisfying chosen parameters: 3730428

Minimum DB seq length: 0  
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Command line parameters:

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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5	321.5	2.7	1435 15	Sequence 2178, AP
6	314	2.6	1394 15	Sequence 18, Appl
7	314	2.6	1394 16	Sequence 1764, AP
8	314	2.6	1394 18	Sequence 5163, AP
9	312	2.6	1426 9	Sequence 15, Appl
10	312	2.6	1426 14	Sequence 15, Appl
11	312	2.6	1426 15	Sequence 15, Appl
12	312	2.6	1426 16	Sequence 1958, AP
13	296.5	2.5	1450 15	Sequence 17, Appl
14	296.5	2.5	1494 15	Sequence 2, Appl
15	269.5	2.2	1594 20	Sequence 17856, A
16	258.5	2.1	1366 20	Sequence 27555, A
17	258.5	2.1	2151 20	Sequence 7050, AP
18	256.5	2.1	5322 17	Sequence 8729, AP
19	247.5	2.1	2285 18	Sequence 101, AP
20	242.5	2.0	1161 20	Sequence 38793, A
21	241.5	2.0	1778 20	Sequence 7035, AP
22	241	2.0	2280 20	Sequence 11742, A
23	240	2.0	2112 20	Sequence 8001, AP
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25	233.5	1.9	1441 15	Sequence 2, Appl
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## ALIGNMENTS

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; Publication No. US20050208558A1  
GENERAL INFORMATION:  
APPLICANT: Venter, J. Craig  
APPLICANT: et al.

TITLE OF INVENTION: DETECTION KIT, SUCH AS NUCLEIC ACID  
TITLE OF INVENTION: ARRAYS, FOR DETECTING EXPRESSION OF 10,000 OR MORE  
TITLE OF INVENTION: DROSOPHILA GENES.  
FILE REFERENCE: CL000728  
CURRENT APPLICATION NUMBER: US/11/097,143  
CURRENT FILING DATE: 2005-04-04  
PRIOR APPLICATION NUMBER: 60/152,832  
PRIOR FILING DATE: 1999-10-05  
PRIOR APPLICATION NUMBER: 60/160,191  
PRIOR FILING DATE: 1999-10-19  
PRIOR APPLICATION NUMBER: 60/161,932  
PRIOR FILING DATE: 1999-10-28  
PRIOR APPLICATION NUMBER: 60/164,769

✓ 10/11/05  
OSS, 2004/11/11

PRIOR FILING DATE: 1999-11-12  
 PRIOR APPLICATION NUMBER: 60/173,383  
 PRIOR FILING DATE: 1999-12-28  
 PRIOR APPLICATION NUMBER: 60/175,693  
 PRIOR FILING DATE: 2000-01-12  
 PRIOR APPLICATION NUMBER: 60/184,831  
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 PRIOR APPLICATION NUMBER: 60/191,637  
 PRIOR FILING DATE: 2000-03-23  
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Db	301	AlaAsnAlaAsnGlyIleSerSerGlySerSerAsnCysLeuAspPheGlyAsnGln 320	Db	661	AlaProAsnGlyAsnMetMetGlySerSerThrAspMetLeuIleSerPheGlyAsnThr 680
QY	2673	AATCACATATTGCTGTTCACTCAGTGGCAACAAAGGGGGAAATCAAGTTAAC 2732	OY	3753	AGCTGCAAACGTCACTGGAAACGGCCCAGATATGCTAAGGAGTTAAATCAAGATAGC 3812
Db	321	AsnHisIlePheAlaPheSerThrGinLeuAlaAsnLysGlyAlaGluSerValLeuser 340	Db	681	SerCysAsnValLeuGlyLysGlyAlaAsnGln 700
QY	2733	GGTCAATTCAACTATTATGGTATCACTGCACTGCTGCTACAAAAGCTTCCTG 2792	OY	3813	CGAACCCATCACATCAAGGGGGATGCTCAAATGGACTGGTCGAGATTCAACATCAA 3872
Db	341	GlyGlnPheGlnThrIleAlaLysThrGinProAlaThrLysSerPheIle 360	Db	701	ArgThrHisSerHisGlnGlyGlyValAlaGinMetGluTrpSerLysIleGln 720
QY	2793	GAAGACTTTATGAAAACCTTAAGATTAAACAAGTTACAGGGCACAACTCCGTC 2852	OY	3873	TTTCGAAGAACGGCTCAAGGGGGCAAGGCCAGACAAGTCACTGGAACGTAC 3932
Db	361	GluAspPhePheMetLysAsnProLeuLysSerIleAsnLysLeuGlnArgHisAsnSerVal 380	Db	721	PhePheGlnIleGlyLysProAspMetSerLysGluValLeuAsnGlnAspSer 740
QY	2853	GGTATGCCATGGCATGGGCAAGGTTGACTAACTCTCTAACTCTGTAGCCAA 2912	OY	3933	CAACGAAACCCCTCTGGATCTGGAAACTCGTTAACACAACCGGGACCCCTG 3992
Db	381	GlyMetProTriPheGlyMetGlyGlyValGlyLeuThrProProAsnProValAlaLys 400	Db	741	GlnGlnGlnThrProSerGlySerGlyGlyLysProArgGlnValThrGlyThrValPro 760
QY	2913	ATAACACAACGCCACATAAAAGACCGCTATTGAAACCCCAATTCAACAA 2972	OY	3993	CAAGGCCACCTCTCTACACTCCACCTCCAGAGATCTGGCTAGTACCAATAGCCACT 4052
Db	401	IleThrGlnGlnGlnProHisThrLysThrValGlyLeuLeuLysProGlnPheAsnGln 420	Db	761	GlnGlyProProProProProTyRHisSerIleGlnGlnArgSerAlaSerValProIleAlaThr 780
QY	2973	CATGAAACAGCAAACGTTAGTACTGTAAGCCACTCTTGTGCGACCGACT 3032	OY	4053	CATGCCCAATCCCTCGAGTCCAAACATCTATCTCCCGTCACCGGGGACACCGCA 4112
Db	421	HisGluAsnSerLysBargSerThrValSerAlaProSerAsnSerPheValAspGlnSer 440	Db	781	GlnSerProAsnProSerSerProAsnAsnLeuSerLeuProSerProArgThrThrAla 800
QY	3033	GATCCTATGGGCAACGAACTGAATGTTGCTGGAAAGGGGATCTCAACACAGT 3092	OY	4113	GCAGTCATGGGATGCCGACCAACTCTCTAGCATGGATGCAAGGGATCATTTCTGGA 4172
Db	441	AspProMetGlyAsnGluThrGluLeuMetCysTrpGlyIleSerSerAsnThrSer 460	Db	801	AlaValMetGlyIleProThrAsnSerProSerMetAspGlyIleSerLeuSerGly 820
QY	3093	AGGTCTGGACAAACTCGGAATCATGTTAGACAGTATCGTACATCCAGGACTCACAG 3152	OY	4173	TCTGTTCCGCAAGCTTAATCTCGACGGGTTCAAGCAGGACACCCCATGCCCTAATCAAATCGTACTAGAAT 4292
Db	461	ArgSerGlyGlnAsnSerArgAsnHisValAspSerSerieserThrSerSerGluSerGln 480	Db	821	SerValProGlnAlaAsnThrSerThrValGlnAlaGlyLysThrThrValLeuserAla 840
QY	3153	GCAATAAGATACTGGAGGACGCTGGGACAGGTCAACAAAGGAAGGAT 3212	OY	4223	ACAAAGAACTGTTTCAAGGAGACACCCCATGCCCTAATCAAATCGTACTAGAAT 4292
Db	481	AlaIleLysIleLeuGluAlaAlaGlyValAspLeuGlyGinValThrLysGlySerAsp 500	Db	841	AsnLysAsnCysPheGlnAlaAspThrProSerSerAsnProSerAsnGlnAsnArgSerArgAsn 860
QY	3213	CCTGGCTGACAACTGAAACATGTCAGGAGTAAGGTCCAGGAA 3272	OY	4293	ACGGATGCTCAAGGATTGAGTCTTCGGCTCTGCTGTT 4352
Db	501	AlaLeuThrThrGluAsnAsnIleValAspLeuGlyGinValGlyValAspProAspGlu 520	Db	861	ThrGlySerSerValLeuThrHisAsnLeuSerSerAsnProSerThrProLeuSer 880
QY	521	AsnLeuThrProGlnGlnArgGlnIleAspGluGluGlyGinLeuAlaLysIleLysMet 540	Db	881	HisLeuSerProLysGluPheGluUserPheGlyGlySer 894

Db	894	-----	-----
Qy	4473	TAACCTCGGAATTGATAGAAAAATCAGGAATAGAAAAATTTCGGACCG	4532
Db	894	-----	-----
Qy	4533	CCCATCCATTCTGAATTCCAATTCTGGAGTAGTTAGAGATAATCTACTATAAA	4592
Db	894	-----	-----
Qy	4593	TTAACACGAAATTCATCCGTTAATGAAAATCACTATTGTTAATAAGAATTAA	4652
Db	894	-----	-----
Qy	4653	AATATGTTTATAATTTCTACAGGTATAACATGAAAAGTAGGGGCCAACGCCAC	4712
Db	895	-----	-----
Qy	4713	ACGGTCAGGGTCACCAAGTAATAGTCTAATAGGGCAATAAGATGTACGATTGCTG	4772
Db	907	InGlyGlnArgSerProValAsnSerLeuIleGluValAsnLysAspValArgPheAla	927
Db	927	1asSerSerProGlyPheAsnProHisProHisMetGinSerAsnSerAsnSerAla	947
Qy	4773	CATCAGTCCTGGTTAACCGCATCCACATATGCAAAGCAATTCAATTGAGCTAA	4832
Qy	4833	ACGCCATAAAATGGGCTTACCAATAACAGATGGAGTAATTTAAATTATTATT	4892
Qy	947	InAlaInTyrLysMetGlySerThrAsnLeuIleGlnMetGlu--Arg-----	960
Db	4893	TAACGTTTGTGTTAATTATCTCTTCAAGGGTCAAGCATCAGCGCAAGGTGATC	4952
Qy	961	-----	-----
Db	4953	CGTACAAATTAGTCGGGCTCCGATAATTCCGCTAAATCCCAATAGTGGCAATCGGCC	5012
Qy	968	rValGlnInPheSerArgArgSerAspAsnLeuAsnProAsnSerGlyAsnArgPr	988
Db	5013	GCCACCAAAACAGATGCCAAACTTCGATCCAATCTCTTGGCACAAATGTCCC	5072
Qy	988	OProProAsnLysMetThrGlnAsnPheAspProIleSerSerLeuAlaGlnMetSerG1	1008
Qy	5073	ACAACATAACAGTTGCCAGCATGGGTAGTCCAGCCGGAACCTGGGTATGACGAT	5132
Db	1008	ngInLeuThrSerCysValSerSerMetGlySerProAlaGlyThrGlyMetThrMe	1028
Qy	5133	GATGGGGGGTCCGGGACCGTCCGACATCAATTGAGCATGGATAATTGGGACTAGA	5192
Db	1028	tMetGlyGlyProGlyProSerAspIleAsnLeuIleGlyProIleGlyMetThrMe	1048
Qy	5193	TGGATCAGGAATAGATACTAACTAACTGTCATTCATGATGTCGTAAATGAA	5252
Db	1048	pGlySerGlyIleAspThrIleAsnGlnAsnAsnCysHisSerMetAsnValMetAs	1068
Qy	5253	CTCAATGGGTTCCCGAATGCTGAATCTAAATGTGCGTAGCAGGGTCCAATGGACC	5312
Db	1068	nSerMetGlyProArgMetLeuAsnProLysValAlaGlyProAsnGlyPr	1088
Qy	5313	GCCTGGCTTAATCTTAATCCCCCATGGGATTAAGAGAGAATTCCATAGGGCTGG	5372
Db	1088	oProGlyPheAsnProAsnSerProAsnGlyGlyLeuArgGluAsnSerIleGlySerG1	1108
Qy	5373	CTGTTGGCTCAGCAACTCTCAACTTCAGGGTGTCCACCTGGGCCAGAATGATG	5432
Db	1108	YCysGlySerAlaAsnSerSerAsnPheGlnGlyValProGlyAlaArgMetMe	1128
Qy	5433	GGGTGGAATGCCAGTCATTGTTCAATTCCGAATTCAAGGCGAG 5492	-----
Db	1128	tGlyArgMetProValAsnPheGlySerAsnPheAsnProAsnLe-----	1143
Qy	5493	TACCCAAACACCATACATGCCAGTAAGGGCACAGCCAAACAACAA 5552	-----
Qy	5553	CAATGGGACTATAATGTGCGAATGCCACCTAGTCGGAAATTTCAGAGGTACGCTAA	5612
Db	1144	-----	-----
Qy	5613	CCCTCAAATGGGTCTGAGCAATGGGTGCCAATGCCACATGCCAGGCCAGGG	5672
Db	1148	nProGlnMetGlyAlaValGlyArgGlySerProSerAlaSerAspG1	1168
Qy	5673	TACTCCTGGAATGCCAGGATGAGGGGACCCAGGCCGGGGTATGCTAATGAAATC	5732
Db	1168	yThrProGlyMetProGlyLeuMetAlaGlyProGlyAlaGlyGlyMetLeuMetAsnSe	1188
Qy	5733	TTCCGGAGGACAACCCAGAACAGATCACAAACAAATCCTGGGGCAAGCAATGGTATAA	5792
Db	1188	r-SerGlyGluGlnHisGlnAsnLysIleThrAsnAsnProGlyAlaSerAsnGlyIleAs	1208
Qy	5793	CTTCTTCAGAATTGCAATCAAATGTTATTGTTGACGAGAGGGGATTACCCGCCA	5852
Db	1208	nPhePheGlnAsnCysAsnGinMetSerIleValAspGlyGluGlyLeuProGlyHi	1228
Qy	5853	TGACGGATCAATGAAATTGTCACCATCTATGATAAGGGCATGGTCCACATGCCAT	5912
Db	1228	sAspGlySerMetAsnIleGlyGlyGinProSerMetIleArgGlyMetArgProHisAla	1248
Qy	5913	GCGGCCAAATGTAATGGGTGCCGGATGCCACCGTTAACGGCAATTCAAGCTTCAGTTGCCA	5972
Db	1248	tArgProAsnValMetGlyAlaArgMetProProValAsnArgGlnIleGlnInPheAlaG1	1268
Qy	5973	GTCATCGGATGGTATTGACTGTGTCGGGATCCGTCATCATTTCACTAACGGCAATTCAAGCTTCAGTTGCCA	6032
Db	1268	nsnSerAspGlyIleAspCysValGlyAspProSerSerPhePheThrAsnSerCys	1288
Qy	6033	CAACAGGGCTGGACACACATGTTGGATCAGCACACAGGCCATAGCTAAAGACACA	6092
Db	1288	sAsnSerIleGlyProHisMetPheGlySerAlaGlnGlnAlaAsnGlnInProLySthrG1	1308
Qy	6093	ACACATAAGAACATACCTAGTGGAAATGTTGTCAAACCAATCGGGACTGTGAGTCACA	6152
Db	1308	nhisIleLysAsnIleProSerGlyMetCysGlnAsnGlnSerGlyIleAlaValAlaG1	1328
Qy	6153	AGGGCAGATCCAACGTCATGGGCAAGGACATGCCAGGGTCAGTCATTAAATGGACCTAC	6212
Db	1328	nglyGlnIleGlnIleHisGlyGlyGlyGlyGlyIleAlaGlnGlyGlyProIle	1348
Qy	6213	TAATAATAATTAAATGTCACACTGGGGAAAGTGTCACTAACGGTGTCTCTGGCAT	6272
Db	1348	rAsnAsnAsnLeuMetSerThrAlaGlySerValSerAlaThrAsnGlyValSerGlyI1	1368
Qy	6273	CAATTGGTAGGTCCCTCTTACGGACCTGAGTATGCCAGCAATCATAGTTTC	6332
Db	1368	eAsnPheValGlyProSerSerThrAlaIlePheLysIleGlyIleGlyIleGlyI1	1388
Qy	6333	GCAGCAGTTATGCTACCAACACAGGAAGTCACACACAGCATATGCCAGCAGCA	6392
Db	1388	ngInLeuThrAlaThrAsnThrArgSerGlyGlnGlnHisMetHisGlyIle	1408
Qy	6393	CCAGAGCAACATGATAACAACTGGGGATTATCACCAATCCAACGTTCTTGTCAA	6452
Db	1408	sgInSerAsnMetIleThrMetProProAsnLeuSerProAsnProThrPheIleValAs	1428
Qy	6453	CAA 6456	-----
Db	1428	nLys 1429	-----
RESUL	2	-----	-----
Sequence 10, Application US/09915543	-----	-----	-----
Publication No. US20020086986A1	-----	-----	-----
GENERAL INFORMATION:	-----	-----	-----
APPLICANT: BASLER, Konrad	-----	-----	-----

Attach #3



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Sequence ID

No:  SEQ ID NO 3129  
 LENGTH: 1429  
 TYPE: PRT  
  ORGANISM: DROSOPHILA  
 SEQUENCE: 3129

Conv  
to  
Searc  
Form: First Sequence

Met Leu Ser Thr Thr Met Pro Arg Ser Pro Thr Gln Gln Gln Pro Gln  
 1 5 10 15  
 Pro Asn Ser Asp Ala Ser Ser Thr Ser Ala Ser Gly Ser Asn Pro Gly  
 20 25 30  
 Ala Ala Ile Gly Asn Gly Asp Ser Ala Ala Ser Arg Ser Ser Pro Lys  
 35 40 45  
 Thr Leu Asn Ser Glu Pro Phe Ser Thr Leu Ser Pro Asp Gln Ile Lys  
 50 55 60  
 Leu Thr Pro Glu Glu Gly Thr Glu Lys Ser Gly Leu Ser Thr Ser Asp  
 65 70 75 80  
 Lys Ala Ala Thr Gly Gly Ala Pro Gly Ser Gly Asn Asn Leu Pro Glu  
 85 90 95  
 Gly Gln Thr Met Leu Arg Gln Asn Ser Thr Ser Thr Ile Asn Ser Cys  
 100 105 110  
 Leu Val Ala Ser Pro Gln Asn Ser Ser Glu His Ser Asn Ser Ser Asn  
 115 120 125  
 Val Ser Ala Thr Val Gly Leu Thr Gln Met Val Asp Cys Asp Glu Gln  
 130 135 140  
 Ser Lys Lys Asn Lys Cys Ser Val Lys Asp Glu Glu Ala Glu Ile Ser  
 145 150 155 160  
 Ser Asn Lys Ala Lys Gly Gln Ala Ala Gly Gly Cys Glu Thr Gly  
 165 170 175  
 Ser Thr Ser Ser Leu Thr Val Lys Glu Glu Pro Thr Asp Val Leu Gly  
 180 185 190  
 Ser Leu Val Asn Met Lys Lys Glu Glu Arg Glu Asn His Ser Pro Thr  
 195 200 205  
 Met Ser Pro Val Gly Phe Gly Ser Ile Gly Asn Ala Gln Asp Asn Ser  
 210 215 220  
 Ala Thr Pro Val Lys Ile Glu Arg Ile Ser Asn Asp Ser Thr Thr Glu  
 225 230 235 240  
 Lys Lys Gly Ser Ser Leu Thr Met Asn Asn Asp Glu Met Ser Met Glu  
 245 250 255  
 Gly Cys Asn Gln Leu Asn Pro Asp Phe Ile Asn Glu Ser Leu Asn Asn  
 260 265 270  
 Pro Ala Ile Ser Ser Ile Leu Val Ser Gly Val Gly Pro Ile Pro Gly  
 275 280 285  
 Ile Gly Val Gly Ala Gly Thr Gly Asn Leu Leu Thr Ala Asn Ala Asn  
 290 295 300  
 Gly Ile Ser Ser Gly Ser Ser Asn Cys Leu Asp Tyr Met Gln Gln Gln  
 305 310 315 320  
 Asn His Ile Phe Val Phe Ser Thr Gln Leu Ala Asn Lys Gly Ala Glu  
 325 330 335  
 Ser Val Leu Ser Gly Gln Phe Gln Thr Ile Ile Ala Tyr His Cys Thr

NO: 2

340	345	350
Gln Pro Ala Thr Lys Ser Phe Leu Glu Asp Phe Phe Met Lys Asn Pro		
355	360	365
Leu Lys Ile Asn Lys Leu Gln Arg His Asn Ser Val Gly Met Pro Trp		
370	375	380
Ile Gly Met Gly Gln Val Gly Leu Thr Pro Pro Asn Pro Val Ala Lys		
385	390	395
Ile Thr Gln Gln Gln Pro His Thr Lys Thr Val Gly Leu Leu Lys Pro		
405	410	415
Gln Phe Asn Gln His Glu Asn Ser Lys Arg Ser Thr Val Ser Ala Pro		
420	425	430
Ser Asn Ser Phe Val Asp Gln Ser Asp Pro Met Gly Asn Glu Thr Glu		
435	440	445
Leu Met Cys Trp Glu Gly Gly Ser Ser Asn Thr Ser Arg Ser Gly Gln		
450	455	460
Asn Ser Arg Asn His Val Asp Ser Ile Ser Thr Ser Ser Glu Ser Gln		
465	470	475
Ala Ile Lys Ile Leu Glu Ala Ala Gly Val Asp Leu Gly Gln Val Thr		
485	490	495
Lys Gly Ser Asp Pro Gly Leu Thr Thr Glu Asn Asn Ile Val Ser Leu		
500	505	510
Gln Gly Val Lys Val Pro Asp Glu Asn Leu Thr Pro Gln Gln Arg Gln		
515	520	525
His Arg Glu Glu Gln Leu Ala Lys Ile Lys Lys Met Asn Gln Phe Leu		
530	535	540
Phe Pro Glu Asn Glu Asn Ser Val Gly Ala Asn Val Ser Ser Gln Ile		
545	550	555
Thr Lys Ile Pro Gly Asp Leu Met Met Gly Met Ser Gly Gly Gly		
565	570	575
Gly Ser Ile Ile Asn Pro Thr Met Arg Gln Leu His Met Pro Gly Asn		
580	585	590
Ala Lys Ser Glu Leu Leu Ser Ala Thr Ser Ser Gly Leu Ser Glu Asp		
595	600	605
Val Met His Pro Gly Asp Val Ile Ser Asp Met Gly Ala Val Ile Gly		
610	615	620
Cys Asn Asn Asn Gln Lys Thr Ser Val Gln Cys Gly Ser Gly Val Gly		
625	630	635
Val Val Thr Gly Thr Thr Ala Ala Gly Val Asn Val Asn Met His Cys		
645	650	655
Ser Ser Ser Gly Ala Pro Asn Gly Asn Met Met Gly Ser Ser Thr Asp		
660	665	670
Met Leu Ala Ser Phe Gly Asn Thr Ser Cys Asn Val Ile Gly Thr Ala		
675	680	685
Pro Asp Met Ser Lys Glu Val Leu Asn Gln Asp Ser Arg Thr His Ser		
690	695	700
His Gln Gly Gly Val Ala Gln Met Glu Trp Ser Lys Ile Gln His Gln		
705	710	715
Phe Phe Glu Glu Arg Leu Lys Gly Gly Lys Pro Arg Gln Val Thr Gly		
725	730	735
Thr Val Val Pro Gln Gln Gln Thr Pro Ser Gly Ser Gly Asn Ser		
740	745	750
Leu Asn Asn Gln Val Arg Pro Leu Gln Gly Pro Pro Pro Pro Tyr His		
755	760	765
Ser Ile Gln Arg Ser Ala Ser Val Pro Ile Ala Thr Gln Ser Pro Asn		
770	775	780
Pro Ser Ser Pro Asn Asn Leu Ser Leu Pro Ser Pro Arg Thr Thr Ala		
785	790	795
Ala Val Met Gly Leu Pro Thr Asn Ser Pro Ser Met Asp Gly Thr Gly		
805	810	815
Ser Leu Ser Gly Ser Val Pro Gln Ala Asn Thr Ser Thr Val Gln Ala		
820	825	830
Gly Thr Thr Thr Val Leu Ser Ala Asn Lys Asn Cys Phe Gln Ala Asp		

835	840	845
Thr Pro Ser Pro Ser Asn Gln Asn Arg Ser Arg Asn Thr Gly Ser Ser		
850	855	860
Ser Val Leu Thr His Asn Leu Ser Ser Asn Pro Ser Thr Pro Leu Ser		
865	870	875
His Leu Ser Pro Lys Glu Phe Glu Ser Phe Gly Gln Ser Ser Ala Gly		
885	890	895
Asp Asn Met Lys Ser Arg Arg Pro Ser Pro Gln Gly Gln Arg Ser Pro		
900	905	910
Val Asn Ser Leu Ile Glu Ala Asn Lys Asp Val Arg Phe Ala Ala Ser		
915	920	925
Ser Pro Gly Phe Asn Pro His Pro His Met Gln Ser Asn Ser Asn Ser		
930	935	940
Ala Leu Asn Ala Tyr Lys Met Gly Ser Thr Asn Ile Gln Met Glu Arg		
945	950	955
Gln Ala Ser Ala Gln Gly Gly Ser Val Gln Phe Ser Arg Arg Ser Asp		
965	970	975
Asn Ile Pro Leu Asn Pro Asn Ser Gly Asn Arg Pro Pro Pro Asn Lys		
980	985	990
Met Thr Gln Asn Phe Asp Pro Ile Ser Ser Leu Ala Gln Met Ser Gln		
995	1000	1005
Gln Leu Thr Ser Cys Val Ser Ser Met Gly Ser Pro Ala Gly Thr Gly		
1010	1015	1020
Gly Met Thr Met Met Gly Gly Pro Gly Pro Ser Asp Ile Asn Ile Glu		
1025	1030	1035
His Gly Ile Ile Ser Gly Leu Asp Gly Ser Gly Ile Asp Thr Ile Asn		
1045	1050	1055
Gln Asn Asn Cys His Ser Met Asn Val Val Met Asn Ser Met Gly Pro		
1060	1065	1070
Arg Met Leu Asn Pro Lys Met Cys Val Ala Gly Gly Pro Asn Gly Pro		
1075	1080	1085
Pro Gly Phe Asn Pro Asn Ser Pro Asn Gly Gly Leu Arg Glu Asn Ser		
1090	1095	1100
Ile Gly Ser Gly Cys Gly Ser Ala Asn Ser Ser Asn Phe Gln Gly Val		
1105	1110	1115
Val Pro Pro Gly Ala Arg Met Met Gly Arg Met Pro Val Asn Phe Gly		
1125	40aa	1130
Ser Asn Phe Asn Pro Asn Ile Gln Arg Tyr Ala Asn Pro Gln Met Gly		
1140	insert	1145
Ala Val Gly Asn Gly Ser Pro Ile Cys Pro Pro Ser Ala Ser Asp Gly		
1155	1160	1165
Thr Pro Gly Met Pro Gly Leu Met Ala Gly Pro Gly Ala Gly Gly Met		
1170	1175	1180
Leu Met Asn Ser Ser Gly Glu Gln His Gln Asn Lys Ile Thr Asn Asn		
1185	1190	1195
Pro Gly Ala Ser Asn Gly Ile Asn Phe Phe Gln Asn Cys Asn Gln Met		
1205	1210	1215
Ser Ile Val Asp Glu Glu Gly Leu Pro Gly His Asp Gly Ser Met		
1220	1225	1230
Asn Ile Gly Gln Pro Ser Met Ile Arg Gly Met Arg Pro His Ala Met		
1235	1240	1245
Arg Pro Asn Val Met Gly Ala Arg Met Pro Pro Val Asn Arg Gln Ile		
1250	1255	1260
Gln Phe Ala Gln Ser Ser Asp Gly Ile Asp Cys Val Gly Asp Pro Ser		
1265	1270	1275
Ser Phe Phe Thr Asn Ala Ser Cys Asn Ser Ala Gly Pro His Met Phe		
1285	1290	1295
Gly Ser Ala Gln Gln Ala Asn Gln Pro Lys Thr Gln His Ile Lys Asn		
1300	1305	1310
Ile Pro Ser Gly Met Cys Gln Asn Gln Ser Gly Leu Ala Val Ala Gln		
1315	1320	1325
Gly Gln Ile Gln Leu His Gly Gln Gly His Ala Gln Gly Gln Ser Leu		

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11/19

11/18/05

1330	1335	1340
Ile Gly Pro Thr Asn Asn Asn Leu Met Ser Thr Ala Gly Ser Val Ser		
1345	1350	1355
Ala Thr Asn Gly Val Ser Gly Ile Asn Phe Val Gly Pro Ser Ser Thr		1360
1365	1370	1375
Asp Leu Lys Tyr Ala Gln Gln Tyr His Ser Phe Gln Gln Gln Leu Tyr		
1380	1385	1390
Ala Thr Asn Thr Arg Ser Gln Gln Gln His Met His Gln Gln His		
1395	1400	1405
Gln Ser Asn Met Ile Thr Met Pro Pro Asn Leu Ser Pro Asn Pro Thr		
1410	1415	1420
Phe Phe Val Asn Lys		
1425	1	
	1464	

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